U.S. NUCLEAR REGULATORY COMMISSION

REGULATORY GUIDE 2.7, REVISION 0

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PREPARATION OF UPDATED FINAL SAFETY ANALYSIS REPORTS FOR NON-POWER PRODUCTION OR UTILIZATION FACILITIES

A. INTRODUCTION

Purpose

This regulatory guide (RG) provides licensees of non-power production or utilization facilities (NPUFs) with a method that the staff of the U.S. Nuclear Regulatory Commission (NRC) considers acceptable to meet the applicable provisions of Section 50.71(e) of Title 10 of the *Code of Federal Regulations* (10 CFR) Part 50, "Domestic Licensing of Production and Utilization Facilities" (Ref. 1).

Applicability

This RG applies to each holder of an operating license for an NPUF.

Applicable Regulations

- 10 CFR 50.71(e)(3)(iv) states, "Holders of non-power production or utilization facility licenses issued after [**EFFECTIVE DATE OF FINAL RULE**] shall file a revision of the original FSAR within 5 years of the date of issuance of the operating license. The revision must bring the FSAR up to date as of a maximum of 6 months prior to the date of filing the revision."

Written suggestions regarding this guide or development of new guides may be submitted through the NRC's public Web site in the NRC Library at https://nrcweb.nrc.gov/reading-rm/doc-collections/reg-guides/, under Document Collections, in Regulatory Guides, at https://nrcweb.nrc.gov/reading-rm/doc-collections/reg-guides/contactus.html.

Electronic copies of this RG, previous versions of RGs, and other recently issued guides are also available through the NRC's public Web site in the NRC Library at https://nrcweb.nrc.gov/reading-rm/doc-collections/reg-guides/, under Document Collections, in Regulatory Guides. This RG is also available through the NRC's Agencywide Documents Access and Management System (ADAMS) at http://www.nrc.gov/reading-rm/adams.html, under ADAMS Accession Number (No.) ML18031A007. The regulatory analysis may be found in ADAMS under Accession No. ML18031A003. The associated draft guide DG-2006 may be found in ADAMS under Accession No. ML17068A041, and the staff responses to the public comments on DG-2006 may be found under ADAMS Accession No. ML18031A005.

- 10 CFR 50.71(e)(4)(ii) states, "Non-power production or utilization facility licensees shall file an FSAR update no more than 5 years from the date of the submittal of the updated FSAR required by § 50.71(e)(3)(iv) or order, and shall file subsequent updates no more than 5 years from the date of the previous submittal. Each submittal must reflect all changes made to the FSAR up to a maximum of 6 months prior to the date of filing the submittal."

Related Guidance

- NUREG-1537, "Guidelines for Preparing and Reviewing Applications for the Licensing of Non-Power Reactors: Format and Content," Part 1 (Ref. 2), provides guidance for applicants preparing license applications for NPUFs.

Purpose of Regulatory Guides

The NRC issues RGs to describe to the public methods that the staff considers acceptable for use in implementing specific parts of the agency's regulations, to explain techniques that the staff uses in evaluating specific problems or postulated events, and to provide guidance to applicants. Regulatory guides are not substitutes for regulations and compliance with them is not required. Methods and solutions that differ from those set forth in RGs will be deemed acceptable if they provide a basis for the findings required for the issuance or continuance of a permit or license by the Commission.

Paperwork Reduction Act

This RG provides voluntary guidance for implementing the mandatory information collections in 10 CFR Part 50 that are subject to the Paperwork Reduction Act of 1995 (44 U.S.C. 3501 et seq.). These information collections were approved by the Office of Management and Budget (OMB), under control number 3150-0011. Send comments regarding this information collection to the Information Services Branch (O-1F13), U.S. Nuclear Regulatory Commission, Washington, DC 20555-0001, or by e-mail to Infocollects.Resource@nrc.gov, and to the OMB reviewer at: OMB Office of Information and Regulatory Affairs (3150-0011), Attn: Desk Officer for the Nuclear Regulatory Commission, 725 17th Street, NW, Washington, DC 20503; e-mail: oira_submission@omb.eop.gov.

Public Protection Notification

The NRC may not conduct or sponsor, and a person is not required to respond to, a collection of information unless the document requesting or requiring the collection displays a currently valid OMB control number.

B. DISCUSSION

Reason for Issuance

This new RG (Revision 0) provides implementing guidance for NPUF licensees to prepare and submit updated final safety analysis reports (FSARs) and subsequent FSAR updates to meet the applicable requirements of paragraph (e) of 10 CFR 50.71, "Maintenance of records, making of reports." In 2019, the NRC amended 10 CFR 50.71(e) to require NPUF licensees to prepare and submit to the NRC an updated FSAR and subsequent FSAR updates at intervals not to exceed 5 years. Before 2019, NPUF licensees were required to submit updated FSARs only as part of the license renewal process. The scope of and reasons for FSAR changes that need to be submitted to the NRC under 10 CFR 50.71(e) are substantially different from those related to license renewal; therefore, issuance of specific guidance in this RG is warranted to assist licensees with compliance.

Background

Under 10 CFR 50.34(b), the NRC requires that "Each application for an operating license shall include a FSAR. The FSAR shall include information that describes the facility, presents the design bases and the limits on its operation, and presents a safety analysis of the structures, systems, and components [SSCs] and of the facility as a whole." For this reason, the FSAR serves as a definitive record of the licensing basis for the NPUF and is an important resource for the safety of the licensee's operational programs and the effectiveness of the NRC's oversight activities. Over time, the NPUF's licensing basis and related information in the FSAR (and supporting references) can change as a result of facility modifications, license amendments, new regulatory requirements, and other requirements of the Commission. These changes can be, and historically have been, driven by shifts in the NPUF's research mission, fuel conversions, modernization of safety systems, facility performance enhancements, and major maintenance activities. Over many years of operation, cumulative changes to an NPUF can significantly alter its licensing basis or as-built design, or both. Without routine updating, the FSAR could lose its value as a resource of information on the safety of the NPUF and potentially have adverse effects on the safety of the licensee's programs and effectiveness of NRC oversight.

During its reviews of license renewal applications for more than 20 NPUFs during the period 2006–2017, the NRC observed that some licensees did not adequately update their FSARs or properly maintain the supporting references. This often led to delays in the license renewal reviews and significant resource expenditures by both licensees and the NRC. To avoid the recurrence of these issues for NPUF licensees that will undergo license renewal in the future and to maintain the accuracy and, consequently, the effectiveness of the FSAR for all NPUFs, the NRC established requirements in 10 CFR 50.71(e) for NPUF licensees to submit to the NRC an updated FSAR and subsequent FSAR updates at intervals not to exceed 5 years. In addition, the NRC modified 10 CFR 50.51, "Continuation of license," to eliminate the 40-year maximum license term for NPUFs, other than testing facilities, licensed under 10 CFR 50.21(a) or 10 CFR 50.21(c). Routine FSAR updates required by 10 CFR 50.71(e) were a major component of the technical basis for this rule change because they will supplant and improve on the FSAR updates required by the license renewal process.

In the 1980 final rule, "Periodic Updating of Final Safety Analysis Reports" (Ref. 3), the NRC established similar requirements for updating the FSAR of a nuclear power plant. Although RG 1.181, "Content of the Updated Final Safety Analysis Report in Accordance with 10 CFR 50.71(e)," (Ref. 4), and the Nuclear Energy Institute (NEI) 98-03, "Guidelines for Updating Final Safety Analysis Reports," Revision 1 (Ref. 5), do not directly apply to NPUFs, NPUF licensees may gain additional insights from them on updating their FSARs.

Role of the Updated FSAR and Subsequent FSAR Updates

The primary purpose of preparing the updated FSAR and subsequent FSAR updates is to ensure that the FSAR contains a description and analysis of the NPUF that reflect the current licensing basis. Under 10 CFR 50.71(e), the NRC requires the licensee to submit an updated FSAR and subsequent FSAR updates at intervals not to exceed 5 years to provide a common reference for the licensee and the NRC. In contrast, the FSAR (as updated) defined in 10 CFR 50.59(a)(4) serves as an up-to-date reference for the NPUF licensee to use in its activities between submittals required by 10 CFR 50.71(e) or by NRC inspectors and reactor operator licensing examiners when they are on site.

As described in the NRC's 1980 final rule, "Periodic Updating of Final Safety Analysis Reports," the role of the updated FSAR and subsequent FSAR updates is to serve as a "reference document to be used for recurring safety analyses performed by licensees, the Commission, and other interested parties" (Ref. 3). The NRC uses these documents in its regulatory oversight of NPUF licensees as a reference for evaluating license amendment requests and in preparation for and conduct of inspection and operator examination activities. Licensees use these documents as the basis for their operational programs and changes to the facility or FSAR made under 10 CFR 50.59, "Changes, tests and experiments," or 10 CFR 50.90, "Application for amendment of license, construction permit, or early site permit," for example. However, in the case of changes made under 10 CFR 50.59 and 10 CFR 50.90, use of the FSAR (as updated) may be required to take into account changes since the last submission of the FSAR under 10 CFR 50.71(e). In addition, the updated FSAR and subsequent FSAR updates provide the public with a current description of the facility and its operation.

Harmonization with International Standards

The International Atomic Energy Agency (IAEA) has established the IAEA Safety Standards Series, which represents the international consensus on what constitutes an adequate level of safety for protecting people and the environment from nuclear facilities and activities. With respect to this RG, the following safety standards provide additional relevant information:

- IAEA Safety Standards Series No. SSR-3, "Safety of Research Reactors," issued 2015 (Ref. 6)
- IAEA Safety Standards Series No. GS-G-3.1, "Application of the Management System for Facilities and Activities," issued 2006 (Ref. 7)
- IAEA Safety Standards Series No. GS-G-3.5, "The Management System for Nuclear Installations," issued 2009 (Ref. 8)
- IAEA Safety Standards Series No. SSG-10, "Aging Management for Research Reactors," issued 2010 (Ref. 9)
- IAEA Safety Standards Series No. SSG-20, "Safety Assessment for Research Reactors and Preparation of the Safety Analysis Report," issued 2012 (Ref. 10)
- IAEA Safety Standards Series No. SSG-24, "Safety in the Utilization and Modification of Research Reactors," issued 2012 (Ref. 11)

Although the NRC has an interest in facilitating the harmonization of standards used domestically and internationally, the agency does not specifically endorse the IAEA Safety Standards listed above and is only acknowledging that these documents may be useful references for general information.

C. STAFF REGULATORY GUIDANCE

1. Content of the Updated FSAR and Subsequent FSAR Updates

a. The regulations in 10 CFR 50.71(e)(3)(iv) require licensees to submit a complete updated FSAR within 5 years of issuance of the initial operating license or renewed operating license for the NPUF. The licensee should update the original FSAR submitted as part of the application for the initial operating license or application for relicensing or license renewal, as appropriate. The updated FSAR should contain those pages from the originally submitted FSAR that are still applicable plus new replacement pages that appropriately incorporate in the FSAR the effects of supplements, amendments, and other changes that may have been made either in response to NRC questions or on the applicant's or licensee's own initiative. This will result in a single and complete updated FSAR that can then serve as the baseline for future changes.

The regulations in 10 CFR 50.71(e)(4)(ii) require licensees to submit subsequent FSAR updates to the NRC at intervals not to exceed 5 years. Each subsequent FSAR update must reflect all changes made to the FSAR since the previous submittal made under 10 CFR 50.71(e) up to a maximum of 6 months before the submittal date of the subsequent FSAR update.

The updated FSAR and subsequent FSAR updates should include the following types of information:

(1) Changes to the facility or facility operations resulting from new or amended regulatory requirements.

(2) Changes and the effects of changes to the facility or procedures and experiments that are not described in the FSAR to ensure that the updated FSAR and subsequent FSAR updates contain the latest information developed. Facility technical specifications typically require licensees to make operating reports annually and special reports as required. The licensee should review these reports to determine whether they contain information that should be included in the updated FSAR and subsequent FSAR updates. Examples of information that should be considered under the requirements in 10 CFR 50.71(e) for NPUFs include the following:

1. evaluations performed by the licensee under 10 CFR 50.59 that result in changes to the FSAR. Some examples include the following:

a. evaluation of a change made to the facility during, or as a result of, the commissioning of a new facility or a major facility modification;

b. evaluation of a change to an SSC as part of major preventive or corrective maintenance (e.g., replacing an analog meter with a digital readout, replacing a safety-related pump with one that has increased flow when the flow is an analyzed condition in the FSAR, or a change to an electrical system schematic or an instrumentation and control drawing in the FSAR); or

c. evaluation of a change in the facility, procedures, or experiments not previously analyzed or described in the FSAR;

2. evaluations and analyses performed by the licensee to support an amendment to an NPUF operating license under 10 CFR 50.90;

3. responses by the licensee to the NRC's requests for additional information (e.g., during initial licensing, license renewal, or the amendment process) or other Commission requests or requirements that result in changes to the FSAR;

4. evaluations by the licensee of potential or actual aging of SSCs and any aging management actions taken (e.g., repair of pool liner leakage, abandonment of underground piping) that affect the descriptions or analyses in the FSAR. Updates to the analysis of the expected life of a structure, system, or component, should be done according to the requirements in 10 CFR 50.59 or 50.90, as appropriate, and incorporated in the next FSAR update. As an example, analysis of the expected life of the reactor tank would need to be updated using an appropriate regulatory process (e.g., 10 CFR 50.59), prior to that analysis becoming invalid, and then incorporated in the next FSAR update. As another example, an analysis of the expected lifetime of a new component done to support a license amendment under 10 CFR 50.90, would need to be incorporated in the next FSAR update;

5. evaluations by the licensee of changes in the facility site environs (e.g., new industrial, transportation, military, or residential facilities near the facility site or changes in the population potentially exposed to facility releases);

6. regulatory commitments made by the licensee in special reports that directly result in changes to the FSAR or that affect the descriptions or analyses in the FSAR; and

7. significant changes in the facility site environs such as data obtained to support or develop the original facility design basis related to natural phenomena, including geography, meteorology, geology, hydrology, and seismology.

b. As part of the FSAR update process, licensees should remove obsolete information from the FSAR, such as SSCs that are no longer installed in the facility and evaluations or other descriptions that no longer apply to the facility as described in the FSAR. The information removed from the FSAR as part of the update process should be identified and reported to the NRC with the basis for the licensee's determination that such information should be removed.

c. The FSAR does not need to include information and analyses that support licensing actions (e.g., approval of a license amendment request) if those licensing actions were completed less than 6 months before the submittal date of the updated FSAR or subsequent FSAR update. This does not preclude the licensee from including such information or analyses in the updated FSAR. If a licensing action is pending NRC approval at the time of submission of the updated FSAR or subsequent FSAR update, the submittal should not include information related to the licensing action.

d. Licensees should not re-perform analyses (e.g., using new codes, methods, or assumptions) during the preparation of the updated FSAR or subsequent FSAR updates. These types of changes should be done under 10 CFR 50.59, 10 CFR 50.90, or other requirements of the Commission, as appropriate, and then should be incorporated in the FSAR as part of a future update under 10 CFR 50.71(e).

2. Format of the Updated FSAR and Subsequent FSAR Updates

a. The format of the updated FSAR and subsequent FSAR updates is at the discretion of the licensee; however, the format should generally follow the existing FSAR's format. The guidance in NUREG-1537, Part 1, provides a format for information in the FSAR that is acceptable to the NRC.

b. Under 10 CFR 50.71(e)(5), the updated FSAR and subsequent FSAR updates must include markings that indicate the changed portion on each page and any resulting changes to the contents page(s). Each changed page must also include the date of the change or change number, or both. A summary of the changes and their bases should accompany the updated FSAR and subsequent FSAR updates.

3. Submission of the Updated FSAR and Subsequent FSAR Updates

a. The updated FSAR and subsequent FSAR updates shall be submitted in accordance with 10 CFR 50.71(e)(2), which requires that the submittal include (1) a certification by a duly authorized officer of the licensee that either the information accurately presents changes made since the previous submittal that are necessary to reflect information and analyses submitted to the Commission or prepared pursuant to Commission requirements, or that no such changes were made (see item l below) and (2) an identification of changes made under the provisions of 10 CFR 50.59 but not previously submitted to the Commission.

b. The updated FSAR and subsequent FSAR updates must be submitted in accordance with 10 CFR 50.4, "Written communications," and the facility's technical specifications. Where practicable, licensees should electronically submit the entire document through, for example, Electronic Information Exchange, e-mail, or CD-ROM. The regulation at 10 CFR 50.4(a) specifies that "Electronic submissions must be made in a manner that enables the NRC to receive, read, authenticate, distribute, and archive the submission, and process and retrieve it a single page at a time." The NRC provides specific guidance on acceptable procedures for electronic submissions on its public Web site at http://www.nrc.gov/site-help/e-submittals.html. Users who are new to the process should select the "Getting Started" link to http://www.nrc.gov/site-help/e-submittals/getting-started.html and access the "Reference Materials for Electronic Submissions" link at http://www.nrc.gov/site-help/electronic-sub-ref-mat.html. The "Reference Materials for Electronic Submissions" link also provides a link to the current version of the primary guidance document, "Guidance for Electronic Submissions to the NRC," Revision 8 (Ref. 12). The NRC staff plans to update the guidance periodically to reflect changes in technology and agency experience and to post the latest version of the document. Licensees should use the most recent processes and guidance when submitting documents in electronic format.

c. Under 10 CFR 50.4(b)(6), the NRC requires licensees that submit the updated FSAR or subsequent FSAR updates electronically to submit all future FSAR updates electronically on a total replacement basis.

d. Information included in the updated FSAR and subsequent FSAR updates that is considered sensitive or proprietary and that the licensee seeks to have withheld from the public must be marked in accordance with 10 CFR 2.390, "Public inspections, exemptions, requests for withholding" (Ref. 13). Any information related to security must be submitted in accordance with 10 CFR 73.21, "Protection of Safeguards Information: Performance requirements" (Ref. 14).

e. Under 10 CFR 50.71(e)(3)(iv), the NRC requires licensees to submit an updated FSAR to the agency on a total replacement basis not more than 5 years following the issuance of an initial operating license or renewed license.

f. Under 10 CFR 50.71(e)(4)(ii), the NRC requires licensees to submit subsequent FSAR updates to the agency at intervals not to exceed 5 years following the date of submittal of an updated FSAR or the previous FSAR update. For these subsequent FSAR updates, a licensee may submit signed originals of the paper copies of the change pages or a complete, updated electronic version of the FSAR on a total replacement basis. In both cases, 10 CFR 50.71(e)(1) requires the licensee to submit a list that identifies the current pages of the FSAR following page replacement.

g. The start date of the interval for submission of the subsequent FSAR update required by 10 CFR 50.71(e)(4)(ii) will be the date of the licensee's letter transmitting the previous submittal made under 10 CFR 50.71(e), including certifications submitted under 10 CFR 50.71(e)(2) that no changes were made that affect the FSAR. If a licensee's submittal under 10 CFR 50.71(e) is late, then the start date for the interval to submit the subsequent FSAR update will be the original due date of the late submittal. In other words, a late submittal will not grant the licensee additional time to submit the next update.

h. Submitting the updated FSAR or a subsequent FSAR update to the NRC sooner than the maximum interval of 5 years will not allow the licensee additional time for submission of the next subsequent FSAR update required by 10 CFR 50.71(e)(4)(ii). As an example, a licensee that submits an FSAR update 3 years after the issuance of its operating license will need to submit the next subsequent FSAR update within 5 years, not 7 years, of the last submittal.

i. Because 10 CFR 50.71(e)(3)(iv) and 10 CFR 50.71(e)(4)(ii) specify the maximum acceptable intervals for submitting the updated FSAR and subsequent FSAR updates to the NRC, licensees are responsible for developing their own schedule for submitting the required updates with the allowed intervals. As an example, the licensee may choose to submit the updated FSAR 2 years following the issuance of the operating license and the subsequent FSAR updates annually or 60 days following a change that affects the FSAR.

j. The provisions of 10 CFR 2.109, "Effect of timely renewal application," do not provide relief from the requirements of 10 CFR 50.71(e). Licensees must continue to submit subsequent FSAR updates during the period of timely renewal. In addition, submittal of the updated FSAR as part of the license renewal application does not qualify as a submittal under 10 CFR 50.71(e) unless the licensee designates it as such and unless it fulfills the 10 CFR 50.71(e) submission requirements.

k. The licensee will be subject to the "NRC Enforcement Policy," (Ref. 15), if it fails to submit to the NRC the updated FSAR or a subsequent FSAR update within the allowed maximum interval of 5 years. Licensees should establish by administrative procedure a schedule for submissions required by 10 CFR 50.71(e) that allows for unforeseen circumstances, such as a temporary reduction in staff.

l. If no changes were made that affect the FSAR, the licensee shall submit, in accordance with 10 CFR 50.71(e)(2) and 10 CFR 50.4, a certification by a duly authorized officer that no such changes were made. This action may be accomplished by letter to the NRC's Document Control Desk with a copy to the appropriate NRC resident inspector if one has been assigned to the facility site. Alternately, the licensee may include the certification as part of its report made in accordance with 10 CFR 50.59(d)(2), which is required to briefly describe any changes, tests,

and experiments and summarize the evaluation of each. For many NPUF licensees, this would amount to including the certification in the annual report required by the technical specifications, as long as the annual report is submitted in accordance with the requirements of 10 CFR 50.4. In this case, the licensee should clearly delineate that the annual report includes the certification.

D. IMPLEMENTATION

The purpose of this section is to provide information on how licensees may use this guide and information regarding the NRC's plans for using this RG.

Use by Licensees

Licensees may voluntarily[1] use the guidance in this document to demonstrate compliance with the underlying NRC regulations. Methods or solutions that differ from those described in this RG may be deemed acceptable if they provide sufficient basis and information for the NRC staff to verify that the proposed alternative demonstrates compliance with the appropriate NRC regulations.

Licensees may use the information in this RG for actions that do not require NRC review and approval. Licensees may use the information in this RG or applicable parts to resolve regulatory or inspection issues.

Use by NRC Staff

The backfitting provisions in 10 CFR 50.109 do not apply to NPUF licensees. During regulatory discussions on facility-specific operational issues, the NRC staff may discuss with licensees various actions consistent with staff positions in this RG, as one acceptable means of meeting the underlying NRC regulatory requirement. However, unless this RG is part of the license for a facility, the NRC staff may not represent to the licensee that the licensee's failure to comply with the positions in this RG constitutes a violation.

[1] In this section, "voluntary" and "voluntarily" means that the licensee is seeking the action of its own accord, without the force of a legally binding requirement or an NRC representation of further licensing or enforcement action.

GLOSSARY

Notwithstanding the definitions in Title 10 of the *Code of Federal Regulations*, "Energy," Chapter I, for the purposes of this RG, the following definitions (derived from the referenced documents) apply:

aging Aging is the general process in which characteristics of SSC change with use or time, which eventually leads to degradation of materials subjected to normal service conditions, including normal operation and transient conditions under which the SSC is required to operate. This definition is derived from "IAEA Safety Glossary: Terminology Used in Nuclear Safety and Radiation Protection" (Ref. 16).

aging management Aging management is engineering, operations, and maintenance actions to control, within acceptable limits, aging degradation and wear of SSCs, including timely detection and mitigation (derived from Ref. 9).

change Change means a modification or addition to, or removal from the facility or procedures, that affects a design function, the method of performing or controlling the function, or an evaluation that demonstrates that intended functions will be accomplished (derived from 10 CFR 50.59(a)(1)).

design bases Design bases means information that identifies the specific functions to be performed by an SSC of a facility and the specific values or ranges of values chosen for controlling parameters as reference bounds for design. These values may be (1) restraints derived from generally accepted "state of the art" practices for achieving functional goals or (2) requirements derived from an analysis (based on calculations or experiments, or both) of the effects of a postulated accident for which an SSC must meet its functional goals (derived from 10 CFR 50.2, "Definitions").

effects of changes Effects of changes include appropriate revisions of descriptions in the FSAR such that the FSAR (as updated) is complete and accurate (derived from 10 CFR 50.71).

facility Facility, as described in the FSAR (as updated), means the following:

- the SSCs that are described in the FSAR (as updated)
- the design and performance requirements for such SSCs that are described in the FSAR (as updated)
- the evaluations or methods of evaluation included in the FSAR (as updated) for such SSCs that demonstrate that their intended functions will be accomplished (derived from 10 CFR 50.59(a)(3))

final safety analysis report (as updated) Final safety analysis report (as updated) means the FSAR (or the final hazards summary report) submitted in accordance with 10 CFR 50.34, "Contents of applications; technical information," as amended and supplemented and as updated in accordance with 10 CFR 50.71(e) (derived from 10 CFR 50.59(a)(4)).

historical information Historical information is (1) information that was accurate at the time the licensee's facility was originally licensed that is not expected to be updated for the life of the facility, (2) information that is not affected by changes to the licensee's

	facility or its operation, or (3) information that does not change with time (derived from Ref. 5).
licensing basis	The licensing basis for a facility comprises selected information exchanged between a licensee and the NRC relating to design features, equipment descriptions, operating practices, site characteristics, programs and procedures, and other factors that describe a facility's design, construction, maintenance, and operation. Licensing basis information appears in a variety of document types (e.g., final safety analysis report, license amendments). Each licensing basis document has certain characteristics in terms of change control mechanisms, reporting of changes to the NRC, dealing with discrepancies, and possible involvement of the public. This definition is derived from NEI 07-06, "Nuclear Regulatory Process" (Ref. 17).
non-power production or utilization facility	A non-power production or utilization facility is a production or utilization facility, licensed under 10 CFR 50.21(a), 50.21(c), or 50.22, as applicable, that is not a nuclear power reactor or a production facility as defined under paragraphs (1) and (2) of the definition of "production facility" in 10 CFR 50.2.
obsolete information	Obsolete information is information about SSCs that have been removed from the facility; programs or procedures that are no longer in effect; or design information, evaluations, and FSAR descriptions that no longer apply to the facility (derived from Ref. 5).
subsequent FSAR updates	Subsequent FSAR updates are updates to the FSAR in the form of change pages or a complete revision of the FSAR prepared in accordance with the general requirements in 10 CFR 50.71(e) and the specific requirements in 10 CFR 50.71(e)(4)(ii).
updated FSAR	The updated FSAR is a complete update of the original FSAR prepared in accordance with the general requirements in 10 CFR 50.71(e) and the specific requirements in 10 CFR 50.71(e)(3)(iv). The "original FSAR" is the FSAR submitted as part of the application for an operating license (or renewed operating license) for the NPUF.

REFERENCES[2]

1. *U.S. Code of Federal Regulations* (CFR), "Domestic Licensing of Production and Utilization Facilities," Part 50, Chapter I, Title 10, "Energy."

2. U.S. Nuclear Regulatory Commission (NRC), NUREG-1537, Part 1, "Guidelines for Preparing and Reviewing Applications for the Licensing of Non-Power Reactors: Format and Content," Washington, DC.

3. NRC, "Periodic Updating of Final Safety Analysis Reports (10 CFR Part 50)," *Federal Register*, Vol. 45, No. 92: pp. 30614–30616 (45 FR 30614–30616), Washington, DC, May 9, 1980.

4. NRC, Regulatory Guide (RG) 1.181, "Content of the Updated Final Safety Analysis Report in Accordance with 10 CFR 50.71(e)," Washington, DC.

5. Nuclear Energy Institute (NEI) 98-03, "Guidelines for Updating Final Safety Analysis Reports," Revision 1, Palo Alto, CA, June 1999. (Agencywide Documents Access and Management System (ADAMS) Accession No. ML003779028)

6. International Atomic Energy Agency (IAEA) Safety Standards Series No. SSR-3, "Safety of Research Reactors," Vienna, Austria, 2015.[3]

7. IAEA, Safety Standards Series No. GS-G-3.1, "Application of the Management System for Facilities and Activities," Vienna, Austria, 2006.

8. IAEA, Safety Standards Series No. GS-G-3.5, "The Management System for Nuclear Installations," Vienna, Austria, 2009.

9. IAEA, Safety Standards Series No. SSG-10, "Aging Management for Research Reactors," Vienna, Austria, 2010.

10. IAEA, Safety Standards Series No. SSG-20, "Safety Assessment for Research Reactors and Preparation of the Safety Analysis Report," Vienna, Austria, 2012.

11. IAEA, Safety Standards Series No. SSG-24, "Safety in the Utilization and Modification of Research Reactors," Vienna, Austria, 2012.

12. NRC, "Guidance for Electronic Submissions to the NRC," Revision 8, Washington, DC, May 18, 2017. (ADAMS Accession No. ML13031A056)

13. CFR, "Agency Rules of Practice and Procedure," Part 2, Chapter 1, Title 10, "Energy."

14. CFR, "Physical Protection of Plants and Materials," Part 73, Chapter 1, Title 10, "Energy."

[2] Publicly available NRC documents are available electronically through the NRC Library on the NRC's public Web site at http://www.nrc.gov/reading-rm/doc-collections/ and in ADAMS at http://www.nrc.gov/reading-rm/adams.html. The documents can also be viewed online or printed for a fee in the NRC's Public Document Room (PDR) at 11555 Rockville Pike, Rockville, MD. For problems with ADAMS, contact the PDR staff at 301-415-4737 or (800) 397-4209; fax (301) 415-3548; or e-mail pdr.resource@nrc.gov.

[3] Copies of International Atomic Energy Agency documents may be obtained through its Web site: www.IAEA.org/ or by writing the International Atomic Energy Agency, P.O. Box 100 Wagramer Strasse 5, A-1400 Vienna, Austria.

15. NRC, “NRC Enforcement Policy,” Washington, DC.

16. IAEA, “IAEA Safety Glossary: Terminology Used in Nuclear Safety and Radiation Protection,” Vienna, Austria, 2007.

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